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EXAMINER	
SAINT CYR, LEONARD	

ART UNIT	PAPER NUMBER
2626	

NOTIFICATION DATE	DELIVERY MODE
01/22/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/500,103	KIKUIRI ET AL.	
	Examiner	Art Unit	
	Leonard Saint-Cyr	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 January 1933*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 2, 4 - 6, 8, 12, 13, 15 – 17, 19, 23, 24, 26 – 28, 30* is/are rejected.

7)☒ Claim(s) *3, 7, 9 - 11, 14, 18, 20 - 22, 25, 29, 31 - 33* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 23 – 33 are rejected to non-statutory subject matter. Computer programs claimed are neither computer components nor statutory process, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized.

Thus, since a computer program is merely a set of instructions capable of being executed by a computer, the computer program itself is not a process, and non-statutory functional descriptive material. Accordingly, the subject matter of claims 23 - 33 is held to be non-statutory subject matter.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 4 - 6, 8, 12, 13, 15 – 17, 19, 23, 24, 26 – 28, 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Sugiyama (US Patent 5,675,385).

As per claims 1, 12, and 23, Sugiyama teaches a signal encoding apparatus configured to quantize an input signal, to encode the input signal quantized, and then to output the input signal encoded as an output signal, the signal encoding apparatus comprising:

a quantizer configured to quantize the input signal of a predetermined block based on a plurality of quantization methods ("a plurality of quantizing means"; col.2, lines 49 – 53);

a dequantizer configured to obtain a plurality of decoded signals by respectively dequantizing a plurality of input signals which are quantized by the quantizer (col.2, lines 53 – 55);

an error signal calculator configured to calculate a plurality of error signals of the predetermined block, each of which indicates a difference between each of the plurality of decoded signals and the input signal (col2, lines 60 – 63);

a weight calculator configured to calculate a weight related to degree concerning whether or not quantization noise corresponding to an error signal of a short block which is shorter block than the predetermined block is virtually imperceptible for a user for each of short blocks included in the predetermined block ("the inverse quantizer obtains...data and weighting values of visual sensitivity"; col.2, lines 14 – 19);

a quantization method selector configured, when a plurality of first weighted error signals, each of which indicates a signal obtained by assigning a weight, corresponding

to each short block included in the predetermined block, to an error signal of the short block, are generated, to compare the plurality of first weighted error signals with one another, and to select a given quantization method from among the plurality of quantization methods based on a result of the comparison ("selecting one of said quantizing means having a minimum error"; col.2, lines 63 – 67); and

an outputting unit configured, when the input signal of the predetermined block is quantized based on the given quantization method and then the input signal quantized is encoded, to output the input signal encoded as an output signal ("improving the coding efficiency...reproduction picture quality"; col.8, lines 40 – 42).

As per claims 2, 13, and 24, Sugiyama further discloses that the weight calculator calculates a weight related to degree concerning whether or not quantization noise corresponding to an error signal of each of subblocks into which the predetermined block is divided is virtually imperceptible for the user, for each subblock included in the predetermined block ("the inverse quantizer obtains...on the basis of the block-unit...data and weighting values of visual sensitivity"; col.2, lines 14 – 19), and

wherein, when a plurality of first weighted error signals, each of which indicates a signal obtained by assigning a weight, corresponding to each subblock included in the predetermined block, to an error signal of the subblock, are generated, the quantization method selector compares the plurality of first weighted error signals with one another, and selects a given quantization method from among the plurality of the quantization

methods based on a result of the comparison ("selecting one of said quantizing means having a minimum error"; col.2, lines 63 – 67).

As per claims 4, 15, and 26, Sugiyama further discloses that an instructing unit configured, when a predetermined quantization method is selected by the quantization method selector, to instruct the quantizer not to perform quantization based on any quantization method other than the predetermined quantization method (selecting one of said quantizing means having a minimum error implies not performing quantization based on any quantization method other than the predetermined quantization method; col.2, lines 63 – 67).

As per claims 5, 16, and 27, Sugiyama further discloses that a quantization method generator configured to generate the plurality of quantization methods based on an amount of information of encoding terms necessary for expressing the output signal to be outputted from the output unit ("processing video signals and/or audio signals"; col.2, lines 48 – 50).

As per claims 6, 17, and 28, Sugiyama further discloses that the weight calculator comprises: a prediction analyzer configured to calculate linear prediction parameters by performing a linear prediction analysis of the input signal for each subblock included in the predetermined block ("audio signals, inter-picture prediction residual signals"; col.4, lines 16, and 17); and

a weight generator configured to generate, for each subblock, a weight related to degree concerning whether or not quantization noise corresponding to an error signal of the subblock is virtually imperceptible for the user, based on the linear prediction parameters thus calculated ("the inverse quantizer obtains...data and weighting values of visual sensitivity"; col.2, lines 14 – 19).

As per claims 8, 19, and 30, Sugiyama further discloses a transformer configured to subject the input signal to linear transformation into a transformed signal for each of the subblocks (col.2, lines 48 – 50);

a weight generator configured to generate, for each of the subblocks, a weight related to degree concerning whether or not quantization noise corresponding to an error signal of the subblock is virtually imperceptible for the user, based on the transformed signal of each sub block ("the inverse quantizer obtains...data and weighting values of visual sensitivity"; col.2, lines 14 – 19); and

an inverse transformer configured to perform an inverse linear transformation of each weight thus generated (col.2, lines 56, and 57).

Allowable Subject Matter

4. Claims 3, 7, 9 - 11, 14, 18, 20 - 22, 25, 29, 31 - 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening

claims. The following is a statement of reasons for the indication of allowable subject matter:

As to claims 3, 14, and 25, neither Sugiyama nor Bist, nor Sriram et al., teach nor suggest an electric power calculator configured to calculate electric power values of the plurality of first weighted error signals respectively, and wherein the quantization method selector compares the electric power values of the plurality of first weighted error signals with one another, and selects a given quantization method from among the plurality of the quantization methods based on a result of the comparison.

As to claims 7, 18, and 29, neither Sugiyama nor Bist, nor Sriram et al., teach nor suggest a weighting prediction parameter calculator configured to calculate, based on the linear prediction parameters calculated for each of the subblocks, an average of the linear prediction parameters for each subblock, and to calculate weighting linear prediction parameters corresponding to the predetermined block, based on the average of the linear prediction parameters calculated for each subblock; and a weight generator configured to generate a weight related to degree concerning whether or not quantization noise corresponding to an error signal of the predetermined block is virtually imperceptible for the user, based on the weighting linear prediction parameters corresponding to the predetermined block, and wherein, instead of performing the processing for selecting the given quantization method in the case that the plurality of first weighted error signals are generated, the quantization method selector, when a plurality of second weighted error signals, each of which indicates a signal obtained by

assigning the weight generated by the weight generator, to an error signal of the predetermined block, are generated, compares the plurality of second weighted error signals with one another, and selects a given quantization method from among the plurality of quantization methods based on a result of the comparison.

As to claims 9, 20, and 31, neither Sugiyama nor Bist, nor Sriram et al., teach nor suggest a transformation average value calculator configured to calculate, based on transformed signal values which are values of each transformed signal subjected to the linear transformation, transformation average values corresponding to the predetermined block, each indicating an average of the transformed signal values; a weight generator configured to generate a weight related to degree concerning whether or not quantization noise corresponding to an error signal of the predetermined block is virtually imperceptible for the user, based on the transformation average values corresponding to the predetermined block; and an inverse transformer configured to perform inverse linear transformation of the weight generated by the weight generator, and wherein, instead of performing the processing for selecting the given quantization method in the case that the plurality of first weighted error signals are generated, the quantization method selector, when a plurality of second weighted error signals, each of which indicates a signal obtained by assigning the weight inversely transformed by the inverse transformer, to an error signal of the predetermined block, are generated, compares the plurality of second weighted error signals with one another, and selects a

given quantization method from among the plurality of quantization methods based on a result of the comparison.

As to claims 10, 21, and 32, neither Sugiyama nor Bist , nor Sriram et al., teach nor suggest a signal electric power value calculator configured to calculate a signal electric power value indicating an electric power value of the input signal for each of the subblocks; and a weight generator configured to generate, for each of the subblocks, a weight related to degree concerning whether or not quantization noise corresponding to an error signal of the subblock is virtually imperceptible for the user, based on the signal electric power value corresponding to each subblock.

As to claims 11, 22, and 33, neither Sugiyama nor Bist , nor Sriram et al., teach nor suggest a signal electric power value calculator configured to calculate a signal electric power value indicating an electric power value of the input signal for each of the subblocks; a function calculator configured to calculate, based on respective signal electric power values thus calculated, an electric power function corresponding to the predetermined block indicating distribution of the respective signal electric power values; and a weight generator configured to generate a weight related to degree concerning whether or not quantization noise corresponding to an error signal of the predetermined block is virtually imperceptible for the user, based on the electric power function calculated, and wherein, instead of performing the processing for selecting the given quantization method in the case that the plurality of first weighted error signals are

generated, the quantization method selector, when a plurality of second weighted error signals, each of which indicates a signal obtained by assigning the weight generated by the weight generator, to an error signal of the predetermined block, are generated, compares the plurality of second weighted error signals with one another, and selects a given quantization method from among the plurality of quantization methods based on a result of the comparison.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please see PTO -892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard Saint-Cyr whose telephone number is (571) 272-4247. The examiner can normally be reached on Mon- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LS
01/11/07

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